



Report to the New Jersey Board of Public Utilities

JCP&L's Response to The Outages of July 5-8, 2003

Submitted: July 16, 2003

JCP&L Central Region Event Restoration Summary

July 5th – July 8th, 2003

Overview

Weather reports for the 4th of July, 2003 weekend called for hot, sunny and humid weather. Given the demographics of the JCP&L territory, Company management anticipated heavy electric load conditions on its system associated with the influx of a large tourist population and increased cooling load. The Company prepared for the weekend by having substation crews on duty and, as is normally the case, trouble personnel were also on duty. In addition, all types of line crews were available for call-out in an emergency. There were no outage events on July 4th, 2003.

The events which led to the power interruptions to customers on the barrier island encompassing the area in and around Seaside Heights and Lavallette beginning July 5, 2003 were limited to five primary locations involving the 34.5 kV transmission system, which feeds the area. This 34.5 kV transmission system is the higher voltage transportation network that feeds power to substations, which in turn deliver lower voltage power to distribution circuits. Most customers, including all residential customers, receive their service from these distribution circuits. A number of customers in this area receive their distribution service from local municipal utilities, rather than the Company. When the transmission system does not provide adequate power to a particular distribution substation, the customers served by that substation will experience an outage, even though the distribution power lines are properly functioning. The power interruptions experienced by customers in and around the Seaside Heights and Lavallette area were the result of multiple faults in the transmission lines feeding the area, resulting in insufficient power reaching selected distribution substations to adequately serve the load.

As depicted in the following map, there are three transmission lines feeding the Seaside Heights and Lavallette area. Two of these lines, the X-50 and the V-126, consist of overhead transmission lines which reach the island from the mainland utilizing specialized submarine cables that run under Barnegat Bay. These submarine cables have had a relatively good performance history prior to the beginning of the summer period of 2003. However, it should be noted that in March of 2002, a sewer company excavation had damaged the X-50 submarine cable beneath the roadway in Seaside Park. This damage was repaired at that time and the submarine cable operated without incident up until June 2003.

The third transmission line feeding the area is an overhead line, which traverses the coastal towns from Point Pleasant to Seaside Park. The line is designated on the following map as the C-203 traveling south from the Point Pleasant Area and changes designation to the X-50 as it travels south through Ocean Beach, Lavallette and Seaside (hereinafter referred to as the "Overhead Transmission Line").

The map illustrates the proposed rail network for the New York City Metropolitan Area, including the New York City Transit Authority's (NYCTA) proposed lines and stations. The map shows the Hudson River, Harlem River, and East River, along with major roads like I-95, I-278, and I-19. Key stations and lines are labeled, including HYSON, LARRABEE, LAKEWOOD, S. LAKEWOOD, METEDECONK, LAKEWOOD COGEN, LEISURE VILLAGE, PLEASANT PLAINS, CIBA GEIGY, MONITOU, TOMS RIVER, FLINT, PINE BEACH, NJ PULVERIZING, CENTRAL TREATMENT, LANS MILL, BRICK MEMORIAL, LAURELTON, HERBERTS-MILLE, WOODLAND, POINT PLEASANT, NJ TRANSIT, OVERHEAD TRANSMISSION CABLE, MANTOLOKING, OCEAN BEACH, LAVALLETT, ORTLEY BEACH, SEASIDE HEIGHTS, SEASIDE PARK, and STOCKTON. The map also shows the proposed lines for the New York City Transit Authority, including the New York City Transit Authority's proposed lines and stations.

Timeline

On June 29, 2003, prior to the July 4th weekend, a fault occurred on the X-50 transmission submarine cables feeding the island. Company personnel located a fault on the X-50 submarine cable near the previous repair, which had occurred during the March 2002 Seaside Park sewer excavation Project. Company crews made repairs and energized the line prior to July 4th. All three transmission lines feeding the island were available entering the weekend.

July 5th, 2003

At approximately 12:50 PM on July 5th, a fault occurred on the V-126 transmission line feeding the island. Personnel in the Regional Dispatch Office attempted to incrementally return service to as many customers as possible by switching load to other transmission lines including the recently restored X-50 submarine cable. While this was going on, Company trouble personnel were scouting the overhead portion of the V-126 line attempting to identify and then fix any problems.

While crews were investigating the cause of the fault on the V-126 line, the Overhead Transmission Line that runs up the island experienced a fault in the Mantoloking area at approximately 4:20 PM. The repairs required, due to this fault, involved replacing a section of the Overhead Transmission Line. This left the recently repaired X-50 submarine cable as the only transmission source feeding the island area. The Regional Dispatch Office returned as many customers to service on the island as the remaining line could support. Surrounding towns that were interconnected to the Seaside area also experienced outages and were incrementally restored to service by the Regional Dispatch Office as the outage was confined to as small an area as possible through remotely operated switching. The X-50 submarine cable tripped at approximately 5:40 PM, leaving no transmission sources feeding the island area. Repairs to the Overhead Transmission Line were completed and service was restored at approximately 9:00 PM to as many customers as the Overhead Transmission Line could serve.

A trip again occurred on the Overhead Transmission Line around 10:00 PM. As the load requirements dropped through the night, the single Overhead Transmission Line feeding the island became sufficient to serve all customers by 1:30 AM on July 6th. District line crews continued to work around the clock resolving any distribution equipment problems, such as blown fuses and distribution transformers, that had occurred as a result of the original transmission failure.

July 6th, 2003

By approximately 12:00 noon, the fault which had been identified on the V-126 submarine cable was repaired and tested by the Company's specialized Cable crews. The testing, which was performed prior to completing the splice and returning the V-126 cable to service, did not indicate any additional problems with the submarine cable. However, during the morning of July 6th, the Overhead Transmission Line also had

experienced a fault, which was identified at approximately 11:50 AM, as a downed conductor on Rt. 35 between Mantoloking and Ocean Beach. The Regional Dispatch Office restored service to all customers on the just repaired V-126 transmission submarine cable. Around 4:00 PM the Overhead Transmission Line returned to service providing two transmission sources to the island.

At approximately 5:06 PM the V-126 line tripped open. A fault was identified in the proximity of the previous day's fault. Service to all customers was incrementally restored utilizing the Overhead Transmission Line as the Regional Dispatch Office performed the necessary switching to isolate the faulted lines. Customers remained in service until a section of the Overhead Transmission Line failed in the Lavallette area around 8:00 PM. The Regional Dispatch Office again attempted to isolate the fault and provide service to as many customers as possible.

July 7th, 2003

The faulted section of the Overhead Transmission Line in the Lavallette area was repaired at approximately 12:30 AM. The remaining customers were incrementally restored to service by 2:00 AM with reduced load requirements during the evening hours permitting the entire load to be served by the Overhead Transmission Line. By approximately 8:15 AM the fault which had been identified on the V-126 submarine transmission cable was restored, again providing two transmission feeds to the island.

As the load increased into the afternoon, the V-126 submarine cable faulted for a third time. The Regional Dispatch Office quickly worked to isolate the fault, confine the outages and thereby provide service to as many customers as possible. By isolating the fault as much as possible through switching, the Regional Dispatch Office succeeded in providing service by the Overhead Transmission Line to all substations except for the Ortley Beach substation.

July 8th, 2003

The V-126 submarine cable was restored to service at approximately 2:55 AM allowing for the gradual return of service to the customers served from the Ortley Beach substation.

Contingency plans going forward

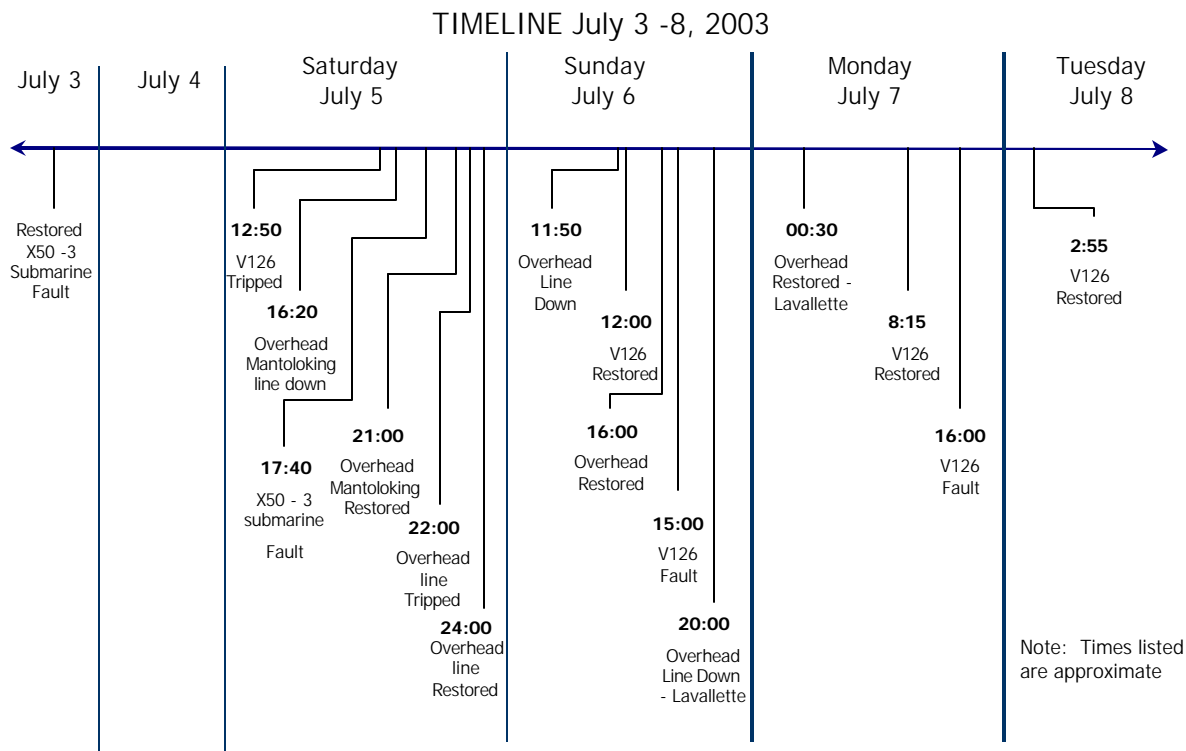
The Company completed the repairs on the X-50 submarine cable by Friday July 11th, 2003. After the X-50 submarine cable was returned to service and began carrying load, it failed again at the same location of the previous fault. Company personnel, with the assistance of industry experts, are investigating potential water intrusion into the cable and determining the best plans for initiating repairs to this transmission source for the island.

Additionally, the Company sited ten emergency generators at strategic locations along the shore area in preparation for the July 12th weekend.

In order to provide the ability for the Overhead Transmission Line to carry the entire load though Seaside Park, the Company is also engineering the replacement of 4.1 miles of overhead transmission wire. This would provide additional capacity in the event both submarine transmission lines were lost simultaneously at some time in the future. In addition, the Company has constructed a temporary emergency transmission line across the Rt. 37 bridge that could substitute for the submerged portion of the V-126 line if needed.

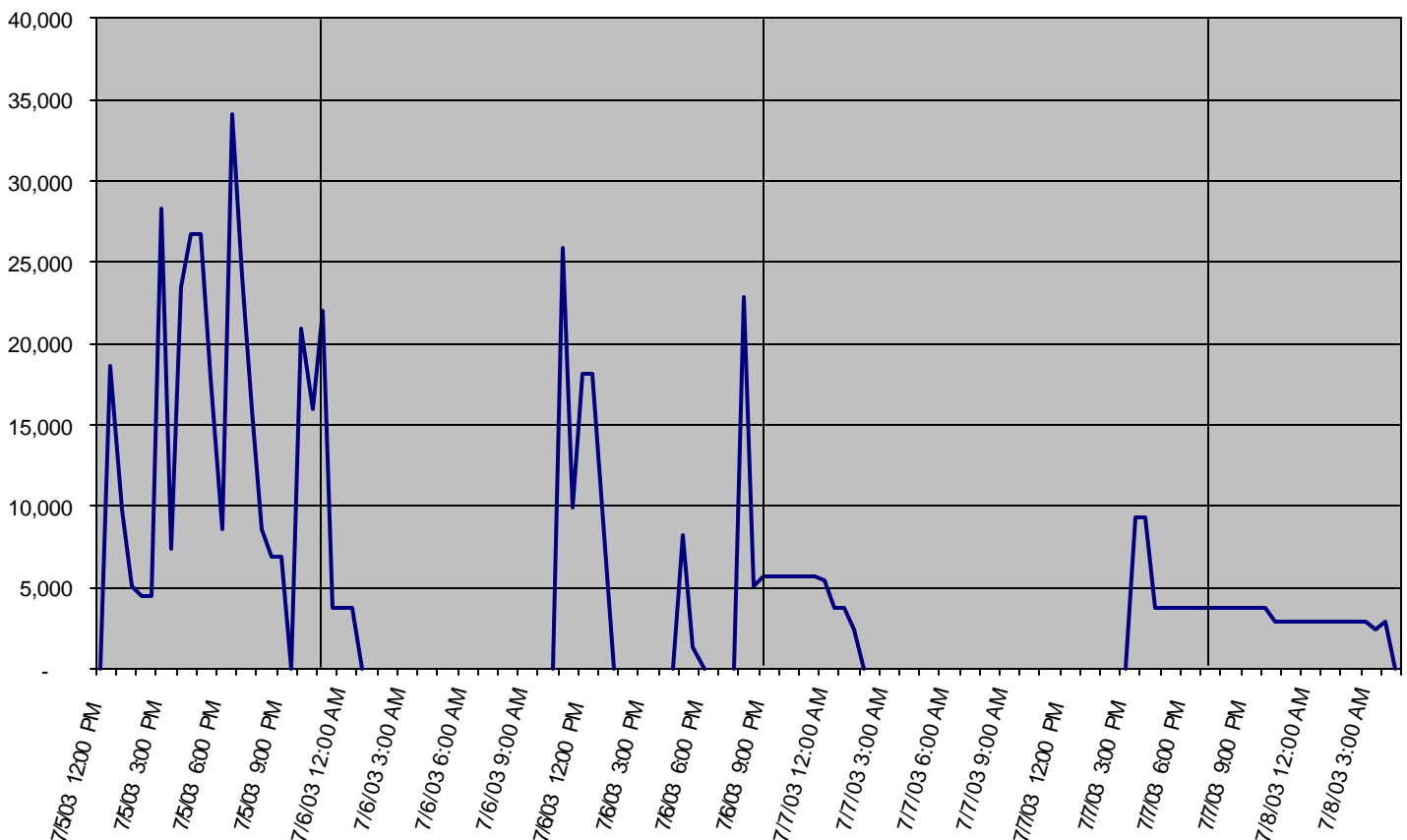
A full engineering analysis of the service to the area will be completed to determine what additional improvements may be required to provide the best assurances that a reoccurrence of the events of the July 4th weekend will be avoided.

The combination of these improvements would exceed the single contingency design criteria to which the system has been designed. The single contingency design is the normal and usual industry standard engineering criteria and is, consistent with utility regulation adopting such engineering standards. By increasing the redundancy in the system that serves these communities, the Company will be increasing reliability to the area for the remainder of the summer and into the future.



1. Total number of customers out of service over an hour-by-hour interval, identified by operating district:

The below graph depicts a half-hourly interval. During many half-hour periods customers may only have been out for a short period of time and not the entire half-hour.



- 2. Peak number of customers out of service, time/date, number of trouble locations:**

Customers 34,080
Saturday, July 5th, 2003 at 6:30 PM
5 Transmission Trouble Locations
14 Distribution Trouble Locations

3. *Method of classifying the above severity or difficulty to repair:*

Please refer to overview.

4. *Number of line crews, Company, non-Company contractors, etc:*

There were a maximum of 58 line crews working in the affected areas at different times. The technical nature of most of the equipment in need of repair required specialized crews such as the Company's Transmission Construction and Maintenance (TC&M) and Cable crews. Given the limited number of locations in need of repair, and the sometimes confined space of performing those repairs, a large number of crews were not required. The Regional Dispatch Office was able to assemble all crews that were required. The district line crews were involved around-the-clock resolving distribution problems downstream of the substations.

5. *The time at which the above crews were requested, arrived for duty and released, the foreign utility response to each request and any subsequent requests and responses.*

Callout response was not a problem in this event. Crews began to be requested to supplement on-duty Trouble personnel after the first fault occurred at 12:50 on July 5th. Throughout the event, whenever a crew was required, it was filled promptly. No foreign crews were requested.

6. *The date and time when a major outage was declared and/or the storm center opened:*

This event was handled by the Regional Dispatch Office. The storm room was not opened.

7. *The date and time the Company first forecasted the storm and by what means:*

Not Applicable

- 8. A 4-hour profile of the number of Company crews working on storm restoration efforts from storm inception until all customers are restored:**

Date	Time	Total Crews
7/5/2003	12:00	15
	16:00	16
	20:00	19
7/6/2003	0:00	25
	4:00	29
	8:00	26
	12:00	26
	16:00	29
	20:00	42
7/7/2003	0:00	39
	4:00	29
	8:00	58
	12:00	47
	16:00	38
	20:00	23
7/8/2003	0:00	16

- 9. A 4-hour profile of the number of foreign utility crews working on storm restoration efforts from storm inception until all customers are restored:**

Not Applicable

- 10. A 4-hour profile of the number on non-Company contractor crews working on storm restoration efforts from storm inception until all customers are restored:**

Not Applicable

- 11. A 4-hour profile of the size of all crews working on storm restoration efforts, from storm inception until all customers are restored:**

Please refer to answer number 8.

- 12. Number of tree crews, Company, non-Company contractors and foreign utility and total.**

Not Applicable.